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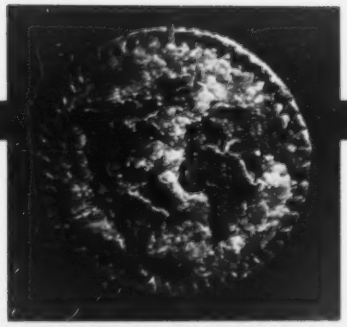
FOOD ENGINEERING

SINCE 1928, THE SOURCE ON PROCESSING, PACKAGING, AND PRODUCT DEVELOPMENT

WORLDWIDE NEW PRODUCTS ANALYSIS

FOOD ENGINEERING



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No longer a pie in the sky, a global food industry is becoming a reality. Within the global village, new products increasingly are featuring less and less: less fat, cholesterol, salt, calories and sugar.

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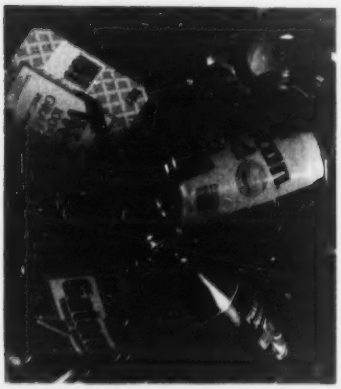

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JESSE H. NEAL AWARD-WINNING EDITORS

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CHARLES E. MORRIS
MIDWEST EDITOR

PATRICIA M. DILLON
SENIOR ASSOCIATE EDITOR

NEW PRODUCT ANALYSIS

This is the year that *FE* goes global in our new product analysis. Worldwide introductions have been innovative, concerned with calories, and sometimes strange by Western standards. But first, a look at the U.S. where new launches have adopted the theme that "less is more" as more and more introductions feature less and less fat, cholesterol, salt, calories and sugar. Total products sporting no/low salt, sugar, cholesterol, fat, low calorie or high fiber increased from 1990's 31.8 percent to 33.3 percent, according to Marketing Intelligence Service, Ltd., Naples, NY. The most dramatic gain was made by no/low fat claims, which increased from 13.8 percent in 1990 to 17.5 percent in 1991.

In last year's very "healthy" marketplace, ConAgra went ballistic when it expanded its *Healthy Choice* name into everything from soup to desserts and virtually everyone else in the field tried to play catch up, said Colleen Galbraith of the North American New Product Report, Valley Forge, PA. ConAgra rolled out lowfat *Healthy Choice Meals* in cans and microwave cups, "hearty and homestyle" *Healthy Choice Soup*, *Healthy Choice Frozen Dairy Dessert*, and its lowfat and cholesterol-free *Healthy Choice Spaghetti Sauce*. Competitors have realized that virtually no area of the supermarket is safe from the Omaha, NE giant.

Rival Campbell Soup outmaneuvered ConAgra in the frozen seafood category by introducing *Mrs. Paul's Healthy Treasures* 97 percent fat-free fish sticks and fillets. Based on proprietary technology that took five years in the making, the new recipe tastes like fried fish. Campbell also dug into the trenches by reformulating its *LeMenu LightStyle* to contain fewer calories, cholesterol and sodium and renaming it *LeMenu Healthy*, said Galbraith.

Other competitors also anticipated ConAgra's foray into their territory. Heinz's Weight Watchers spent $1 million to develop its *Weight Watchers Ultimate 200* to conform to a 200 calorie profile, according to Galbraith. "As it turns out, only two of the 11 items are really new (a grilled chicken sandwich and a ham & cheese pocket sandwich)," she said. The average of the nine entrees contains 14 percent less fat, 19 percent less cholesterol and 20 percent less sodium, she added.

Another trooper that has stormed the light market is SlimFast Foods with its blitzkrieg of coupons appearing in Sunday newspapers throughout the country announcing its line of diet foods. *Ultra SlimFast* rolled out shelf stable entrees, microwaveable pasta, *Frozen Delight* novelty bars, sandwiches, snack bars, popcorn, pretzels, cheese curls, instant soup, pudding and hot cocoa.

The explosion of "lite" consciousness even went so far as to prompt introduction of a light *Milky Way* bar from M&M/Mars. Featuring 25 percent fewer calories, *Milky Way II* received high marks from members of the *FE* staff.

Regarding ubiquitous regulatory issues, it will be interesting to see how the Food and Drug Administration's (FDA) recent crackdown will affect new products making heart-related health claims. The FDA has objected to Clorox Co.'s *Hidden Valley*

Ranch Take Heart salad dressing regarding the use of the word "heart" in the branding and labeling. The agency also objected to the fat-free tag because the salad dressing is formulated with partically-hydrogenated soybean oil which is 100 percent fat. As of *FE* press time, discussions between Clorox and the FDA were still underway. The FDA's action apparently hasn't discouraged other companies from marketing heart-based products. John E. Cain Co., Ayer, MA has marketed *Cains Light Hearted Reduced Calorie* dressing, which is labeled saturated fat-free and cholesterol-free.

In addition to the healthy trend, consumers are showing a marked preference for hot and spicy foods, according to Robert McMath, director of The New Products Showcase & Learning Center, Ithaca, NY. The American Spice Trade Association attributes this trend to the increased use of spices as an alternative to salt. Dehydrated onion and garlic are the most popular spices, with pepper coming in a close third, the association reported. Increased spice consumption is also whetted by Americans' appetite for spicy ethnic dishes, such as Szechuan, Thai, Mexican and Caribbean foods

Elsewhere on the new product front, the recession had a slight dampening effect on new food introductions but apparently failed to stifle beverage introductions. New food intros in 1991 (excluding health and beauty aids, household, pet and other products) totaled 3,148 (8,061 SKUs, which includes all sizes, flavors and varieties of a given product), down from 1990's 3,489 (9,020 SKUs), according to Marketing Intelligence. Beverage intros dropped from 1990's 642 (1,621 SKUs) to 597 (1,805 SKUs) in 1991. Much of the growth occurring within the beverage segment came from line extensions, rather than new brands.

The largest companies are making a comeback. The largest companies are taking a greater leadership role in new product introductions, with the top ten marketers accounting for one out of eight new products in 1991, up from one out of ten in 1990, according to Marketing Intelligence.

Introductions in 1991 from the top companies include, (with 1990 figures in parenthesis): Philip Morris Cos., 288 (275); Procter & Gamble Co., 279 (226); ConAgra, Inc., 183; Grand Metropolitan, 166 (84); Campbell Soup Co., 134 (93); Nestle, 134; General Mills, 86; H.J. Heinz, 96; Quaker Oats, 94 and Ralston Purina, 92. "These companies are thinking longer term," said Richard Lawrence, president of Marketing Intelligence. "They expect to emerge in a stronger position than others, especially second and third tier competitors, whose weaker market positions have forced them to cut back investment in fundamental business building."

Another notable trend is the increase of "green marketing" with the amount of new products making environmental claims reaching an all-time high of 13.4 percent in 1991, up from 11.4 percent in 1990, according to Marketing Intelligence.

Future New Food Product Trends

1. **Whole Grain Food Products** continue to make inroads into the supermarket, a most recent example is brown rice.
2. **Beta Carotene** will be increasingly promoted on the label.
3. **Second Generation Soy and Textured Vegetable Protein (TVP) Products** will be used in more hot dogs, lunch meats, and burgers. Flavored tofu and soy beverages are beginning to enter the supermarket.
4. **Spring Water as an Ingredient** is best demonstrated by Celestial Seasoning's use of Poland Springs or Calistoga brand water in its line of ready-to-drink tea.
5. **Store Brands** will blossom, i.e., Super Fresh's Master Choice brand.
6. **Recycled Packaging** use and smarter use of packaging will escalate.
7. **Organic Food** growth will be fueled by consumers' environmental concerns, especially for ground water.
8. **Socially-responsible Marketing** will continue to be popular, i.e., Ben & Jerry's 1% for Peace ice cream.
9. **Aquaculture-raised Fish** will appear in-store as a result of demand and new technology.
10. **Herbs and Garlic** will increasingly be used in medicinal foods, i.e., herbal teas and herbal soups.

Source: Starr Track Strategic Marketing.

1991 New Product Introductions

	Number of products	% Change from 1990
Food	8,061	-10.6
Beverages	1,805	+11.4
Total	9,866	+0.8

Source: Marketing Intelligence.

What's on the horizon for '92? Marketing Intelligence expects no more than small growth in new products. "The development cycle for new products is several months, so any rebound in the economy after midyear will have little effect on new products in 1992," said Lawrence. "In addition, more restrictive labeling regulations are likely to dampen, rather than accelerate new food and beverage introductions which have thrived in recent years on a free-wheeling climate for 'better-for-you' nutritional claims," he added.

NEW
PRODUCT
ANALYSIS

GLOBAL NEW PRODUCTS

Looking worldwide, new product introductions in 1991 have been innovative, concerned with calories or unusual, at least by traditional U.S. standards. First, a look at the most innovative products:

P&T Foods N.V., Hulshout, Belgium, added two more products to its world's first microwave-sterilized shelf-stable meals: *Tagliatelli* with smoked salmon chunks in Bechamel sauce and *Tortellini* filled with Ricotta and Parmesan cheeses and ham in Bechamel sauce. Named *Top Cuisine*, the shelf-stable meals have just expanded distribution from much of Western Europe to Australia.

The pasta dishes combine modified-atmosphere (MAP) packaging in barrier-plastic containers with microwave sterilization to achieve a non-refrigerated shelf life of nine to 12 months. Consumers can either pop the product into a microwave oven or into boiling water.

Microwave ovens continue to infiltrate Europe and Japan. Some 65 percent of British households own microwave ovens, fast approaching the U.S. rate of 82 percent. A parallel development has been the tendency of British family members to eat at least one meal alone, kindling demand for single-serve microwaveable meals. Among those making microwaveable/dual ovenable introductions was Heinz, which added three varieties to its *Lunchbowl* microwaveable, shelf-stable snack meals.

Meat pastry products, referred to as pasties, are popular snack meals in the U.K. However in the past, microwave ovens failed to brown the product. Several companies have solved the problem, notably Tiffany Sharwood in the U.K. The company introduced a range of single-serve frozen puff pastry pies whose susceptor panel allows the pie to brown.

Quiche varieties of pasties are more popular on the continent. Roger de Lyon added three varieties to its savory pasty line: salmon, snail and salmon & dill quiche. And French company Elkagel introduced frozen *Samossas* in Denmark, crunchy triangular-shaped pasties containing lamb and pork with Indian spices.

Microwave oven ownership in France is still relatively low, 23 percent. French families still tend to eat together, spurring the 110 percent growth in frozen entrees in family-sized dishes. For example, Vivagel produces a line called *Les Plats Cuisinees Familaux*, in family-sized portions.

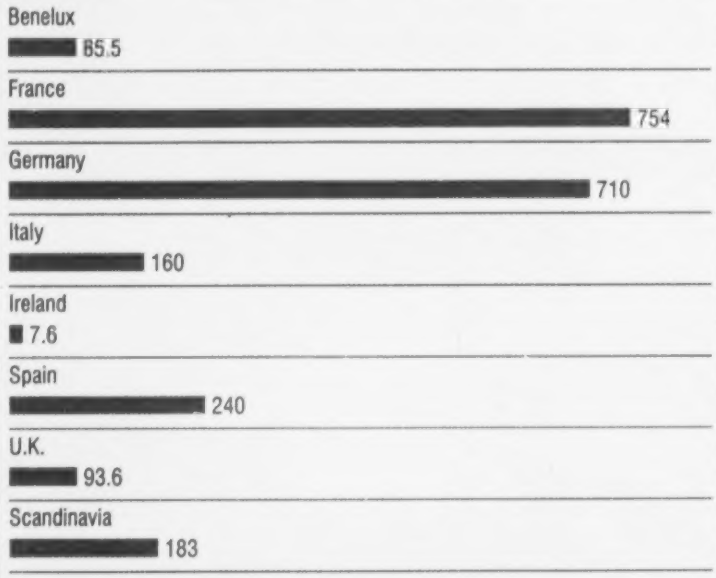
Another noteworthy trend is that more Britons are becoming vegetarian—a total of six million. This trend has fired up vegetarian product sales by 49 percent. Vegetarian entrees are usually based either purely on vegetables or have added meat alternatives, such as soy protein or tofu. However, in the late 1980s, a totally new meat alternative was introduced—Quorn. It took 20 years to develop Quorn from a myco-protein derived from a distant relative of the mushroom. Quorn has a mild taste, is low in fat and calories, high in fiber and can be produced in different textures to suit the applications. A recent Quorn launch was *Quorn and Vegetable Crispbakes* from Dalepak Foods.

In addition, Europeans are demanding more natural and additive-free foods. Frost & Sullivan International, London, reports increased requests for organically-grown produce, organic meat and free-range poultry—in the frozen meals section. While Americans have often been told that refrigerators are not as common in Europe as in the U.S., frozen food consumption statistics in Western Europe are reversing this perception. Frozen food consumption in Western Europe is expected to increase from 1990's 6.87 million tonnes to over 9.1 million tonnes by 1995, according to Frost & Sullivan.

London-based IIS, Ltd. reinforces

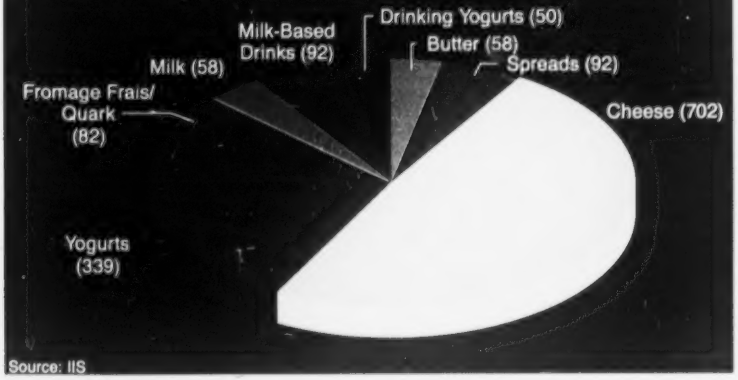
The logo is the same, but the label tells it all. U.S. food and beverages are increasingly going global.

The European Market for Frozen Foods
Volume Increase 1989-1995 (thousand tonnes)



Source: Frost & Sullivan.

New Dairy Product Launches 1986-91
(U.S., U.K., France, Germany, Italy)



Source: IIS

optimism in the frozen market by forecasting continuing boyancy in the frozen ready-to-eat (RTE) meal market. This will be especially true for countries with high microwave ownership. In light of the U.K.'s salmonella scare, frozen foods are perceived as being safe, perhaps helping to fuel a 45 percent increase in new product intros for the category from 1986-1991, according to IIS. Close to 75 percent of convenience foods were RTE, chilled frozen, and canned meals, according to IIS.

Projected as the high performers in the frozen case: potato products, expected to grow by 635,800 tonnes by 1995; RTE meals, to grow by 598,600 tonnes; and vegetables and fruit, expected to increase by 439,700 tonnes, according to Frost & Sullivan.

Pasta and rice comprise many of the RTE meals – both frozen and shelf stable. Nestle-Findus, Finland, introduced *Cannelloni* frozen pasta meals while Frozen tortellini with cheese and ham sauce debuted from *Dagens Ratt* brand in Sweden. Meanwhile a dry pasta with sauce kit was introduced by Bernbacher, Germany.

Milk this cow

Cheese accounts for close to half the Western European introductions, and yogurt, nearly a quarter. As in the U.S, the trend toward healthy eating has modified the fat, additives and flavoring used in cheese products.

Cheese is considered a staple in Germany and is often consumed at breakfast. Low and reduced-fat cheese introductions were common. Mini portions are favored for packed lunches and many cheeses feature added herbs, spices and flavors. Germany's Bridel introduced *Le Carre Leicht*, a low-fat soft French cheese with 12 percent fat content. And who could resist at least trying *Cheesey Wheesey* cheese spread that St. Ivel added to its *Fiendish Feet* line. The Swiss-based cheese maker packages its cheese and yogurts in lidded containers with a ghoulish face mounted on plastic feet. Nestle's *Lunebest* brand launched the first yogurt-based bread spread: *Pikanter Joghurt Aufs Brot*.

Meanwhile a new twist in an old product has been introduced by Long Clawson Dairy, U.K. *Blue Vinney* is a

low-fat cheese made from skimmed milk and has blue veining throughout. First introduced in the 18th century, it suits today's health conscious consumer. And from a country that prides itself on its traditional cheese, the French company Val d'Ancenis launched a low-fat cream cheese called *Vivez Leger* with added vitamins.

Other low-fat products introduced: *Vivez Leger* low-fat butter in France; a butter-based spread with 50 percent less fat in Italy called *Burro*; Birds Eye Wall's light ice cream in the U.K.; Smith's *Less Oil Potato Crisps* in Australia and a low-fat frankfurter from Prima Meat Packers in Japan called *Pork & Beef Frank*.

The latest healthy eating wave in Europe that may arrive in the U.S. sometime in the future is fromage frais and quark. Outside of the U.K., fromage frais is eaten as a savory cheese, while Brits favor it only as a dessert. Quark is a spread that is wolfed down by Germans for breakfast.

Ehrmann, Germany added three varieties to its *Monster Backe* line of quark desserts: pineapple & apple; peach & pear and raspberry & loganberry. German dairy company Borgmann and Cool Country launched *Chocolate Tops* fromage fraise and live yogurt dairy desserts on a layer of fruit with milk chocolate chips. Meanwhile, still a newer product has been introduced by French company Bongrain: a milk snack called *Pikifou* to be marketed next to fromage and yogurt.

Dieting continues to be a preoccupation in most of the developed countries of the world and even in some of the less developed countries, such as Mexico and Brazil. *Weight Watcher* products have posted 17 percent growth in the U.K. More surprising, a low-calorie jelly mix has been introduced in Mexico. Aranda sweetens its *Gloria* jellies with *Nutrasweet* and varieties include: chocolate, lemon, strawberry, vanilla, pineapple, grape and orange. And light bread has arrived in Brazil with Falkenburg marketing it at 45-calories per slice.

The Japanese rival the U.S. in number of new product launches—4,000, with an estimated 99 percent failure rate! A strange quirk among Japanese consumers is the tendency towards relatively short-lived flavor fashions. In 1990, peach was in vogue, last year it was banana.

Japanese foods and beverages are often tailored for specific health needs and some products are just plain outrageous! Considering a career in the opera? Take a gulp of *Karaoke Nodo Jiman Drink Jelly* that was designed to soothe the throat to improve the voice for singing or speaking engagements. FDA's David Kessler would have to change his name to Rambo and hire a commando team to review many of the claims made by Japanese marketers. Pokka Corp. gives new meaning to the term surgical marketing when it segments the market by blood type. *Ko-Tsukau* soda is a lemon-flavored drink rich in calcium and vitamin C aimed specifically at consumers with Type A blood while *Joni-Atsui* soda is apple-flavored and contains Vitamins C, B1, B2 and B6 for those with Type O blood.

Other functional products include: *Aqualagen*, a cosmetic drink which manufacturer Naris Cosmetics claims beautifies the skin. *After Alcohol* is a concentrated mineral water that prevents hangovers after a night of heavy drinking. And *Pana Green* from Wako Angel Green uses the leaves of young carrots to eliminate bad breath.

The Japanese aren't the only ones with a unique perspective. European confectioners swerve hard away from healthy foods with entries such as: *Danish Dog Droppings* hard licorice from Fridam in Holland. A truly appetizing treat sure to delight children is Denmark's Bon Bon Co.'s *Skid Marks, Rotten Fish, Earwax, Dead Flies, Drain Slime* and *Seagull Dung*. Yum. Whether the trend is healthy or just plain funky, worldwide food trends give us a feel for what's coming next for us. Whether we swap sophisticated technology, preferences to eat healthy, or marketing plans that include cultural icons such as *Teenage Mutant Ninja Turtles*, U.S., European and Asian food manufacturers have a lot to offer each other. Pay attention, some day you could be eating quark for breakfast and washing it down with After Alcohol.

BEVERAGES

Meanwhile, back in the U.S.A., beverage introductions reached 1,805, (total SKUs) an increase of 11.4 percent—a dramatic performance compared to the 10.6 percent drop food introductions experienced, down to 8,061 in 1991, (total SKUs) according to Marketing Intelligence. Areas vying for top number of new beverage product introductions in 1991 include fruit and fruit-flavored drinks, coffee and tea (see New Beverage Offerings chart). Bottled water also displayed respectable gains, along with soft drinks. The demand for perceived natural and pure products spurred Pepsi to formulate a clear cola.

Meanwhile, consumer health consciousness kindled renewed growth in fruit beverages, with regional bottlers rolling out new exotic flavors and flavor blends.

- After the Fall Products, Inc., Brattleboro, VT added melon and raspberry flavors to its line.
- Snapple added kiwi-strawberry and pink lemonade to its line.
- Nabisco Brands, Ontario, rolled out *Del Monte* apple raspberry, mandarin orange, pink grapefruit and pineapple orange *Passion Fruit Juice Coolers* with 25 percent juice.
- Ocean Spray is marketing its new *Orange Juice Cocktail* through vending machines that positions OJ as being an all-day drink rather than a breakfast juice.
- Pear juice is rivaling apple juice

as a favorite of the diaper set as H.J. Heinz Co. launched a pear grape juice for babies. White grape juice was also introduced as a non-staining variation of a classic.

- SlimFast Foods Co. tapped fiber-enriched non-carbonated juice drinks.
- South Africa's *Ceres* brand imported by S.A. International, Inc., Brooklyn, NY unveiled granadilla, guava, grapefruit, litchi, mango, orange, peach, pear, pineapple, strawberry, tangerine, red grape, apple & blackcurrant, mango & orange, peach & banana, pineapple & mango fruit juices and juice blends.
- Papaya lime banana is a 100 percent juice blend offered by Excello Wagner Food Products, Inc., Schiller, Park, IL.

Ready-to-drink iced coffees and teas revived the category that had been flat for several years. Most of the offerings are from regional companies, however, beverage giants are beginning to smell the coffee and have global marketing ambitions. Coke and Nestlé announced their joint venture in October to sell Nescafé *Canned Coffee*. For the roll-out, Coca-Cola Nestlé has placed 2,700 vending machines in Seoul. "Korea is going to be a role model for the rest of the world as far as hot and cold (coffee) vending," according to Larry Teague, the former Coke executive who will head up the joint venture's Korean operation. Stores that sell the Nestlé product will be equipped with warming boxes on store counters which enable the canned product to be purchased hot. South Korea is regarded as a prime test market because canned coffee penetration is a relatively low three percent, compared to Japan's 20 percent.

In December, Pepsi announced plans to join forces with Thomas J. Lipton Co. to create new tea beverages and sell Lipton's existing ready-to-drink teas through Pepsi's distribution system. Pepsi dismisses the possibility of that iced teas might cannibalize its cola brands since tea drinkers tend to be older than soft drink consumers.

Both Coke's and Pepsi's move into the iced coffee and tea markets have been interpreted by industry observers as a response to the softening soft drink market. Both the Pepsi and Coke generation is getting older and both conglomerates must be creative in reaching their aging consumers.

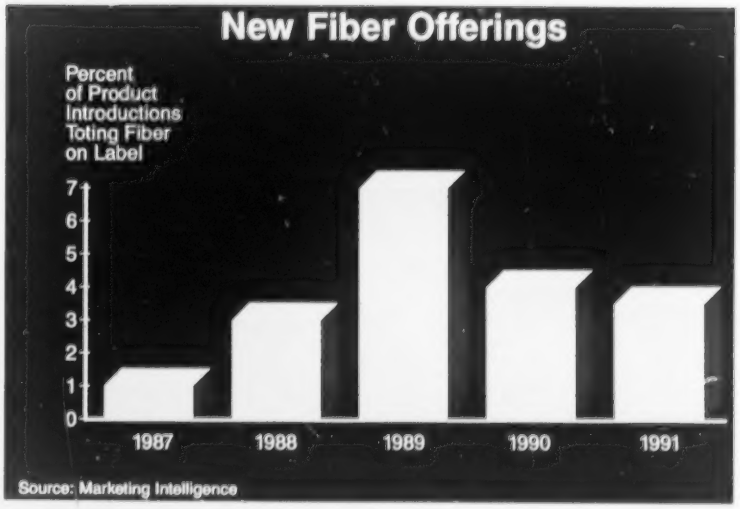
New mineral and bottled water introductions have overflowed the beverage market. Parents worried about the quality of their tap water now can get junior started right with Beech-Nut's *Baby First Spring Water*—bottled water for infants that is fortified with fluoride and packaged in "nipple-ready" bottles. Many of the regional spring water sellers seek the pure and natural niche while offering exotic flavors, such as lemon-ginger, kiwi-lime, raspberry guave & apple, orange mango, raspberry vanilla, to name just a very few. Also, water from everywhere else appears to be in, with many new intros from exotic locales, such as France, Australia, Canada, Scotland, Niagara Falls, NY and Brooklyn. And finally: Taking the concept of ice water literally, Canadian businessman Ron Stamp will bottle water from North Atlantic icebergs and market it as *Canada Ice Water*.

CEREAL

Cereal introductions were subdued last year compared to 1989 and 1990, the golden age for fiber. New RTE cereal introductions dropped from 1990's 31 (151 SKUs) to 23 (122 SKUs) in 1991. While the emphasis on fiber appears to have stabilized as market observers predicted, (see New Fiber Offerings chart), cereal marketers now promote their products based on a variety of grains, rather than one magic elixir as oat bran had been advertised a couple of years ago. However, fiber may have another shot at the limelight as a fat substitute for meat products.

While "natural goodness of whole grains," has been a familiar tagline on many adult cereal launches, Kellogg Co. has raised the ante by introducing *Low-Fat Granola with Raisins*. It is made from whole grain oats, wheat, rice, almonds, and raisins. It features half the fat of Quaker's *100% Natural Cereal*. Quaker is meeting the challenge with a low-fat version of its granola cereal. While granola has been on the market for a while, commercial varieties have had high levels of fat and low-fat varieties should attract consumers seeking both a natural and low-fat fix. Meanwhile, natural continues to sell:

- *Granny Blossom's Original Granola* and *Original Granola with Fruit* from Blossom's Corner, Wells, VT offers more nuts and seeds than other granolas.
- Low-fat shredded wheat that is advertised as being minimally processed is available from Barbara's line of cereals.
- Finally, could the mood food trend be coming true? Tony Adams of Campbell Soup and Linda Gilbert of HealthFocus, Emmaus, PA have predicted that consumers will soon be buying foods to get into the mood for romance, relaxation or to boost their energy. Shamrock Foods Exports Ltd., Winthrop, MS markets its *Shamrock Muesli Wheat & Bran with Fruit and Nuts* cereal as "nutritious, satisfying and calming."



And finally, the latest licensed character introduction from Ralston-Purina departed from the movies to bring us *Urkel-Os* cereal, based on the nerdy Steve Urkel from television's *Family Matters*.

CONVENIENCE MEALS/ENTREES

Although the total number of new food products introduced during 1991 slipped nearly 10 percent as compared to 1990, the number of new entries in the meal/entree category was remarkably consistent with the preceding year. As shown, 473 new meal/entree products (1,104 SKUs) were launched during 1991, just six shy of the 479 (1,189 SKUs) rolled-out the preceding year. More than 40 percent (198) were tagged "microwaveable." More than one-third (158) carried one or more health claims such as "low fat" (90), no additives/preservatives/MSG (74), no/low cholesterol (69), low calorie (66) and low salt/sodium (47).

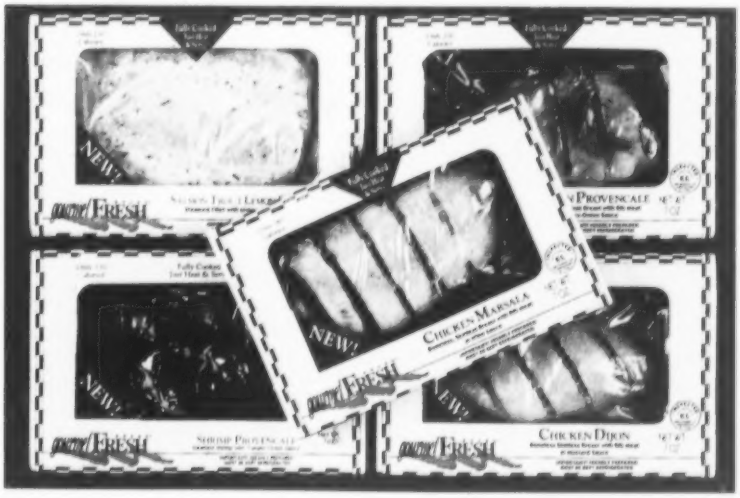
Frozen: Major processors introduced low-fat/low-calorie lines or reformulated existing lines. Examples: *Tyson Low Fat Chicken Dinners* ranging from 220 to 240 calories each; Weight Watchers *Ultimate 2000* entrees, including London Broil, Veal Parmigiana and Glazed Chicken, all under 200 calories; the *Ultra Slim-Fast* line of 18 poultry, pasta and meat-based entrees from ConAgra (licensed by Slim-Fast Foods) ranging from 230 to 400 calories each. All American Gourmet (Kraft General Foods) launched *Budget Gourmet Hot Lunch*, a line of 13 microwaveable low-cal "downsized entrees" aimed at office workers and promoted with free insulated lunch bags. Campbell repositioned it's *Le Menu* dinners to *Le Menu Healthy*, each under 300 calories, and restaged its *Harvest Grain* breakfasts as *Swanson Great Starts Healthy Breakfasts*, replacing (for example) light sausage links with turkey sausage in French toast/pancake

NEW PRODUCT ANALYSIS

New Meal/Entree Products, 1990-91
(Fresh, Frozen & Shelf-Stable)

	1991		1990	
	No.	SKUs	No.	SKUs
Entree mixes	13	26	13	37
Meals & entrees	167	425	157	367
Meat meals & entrees	88	194	81	159
Fish meals & entrees	19	33	22	56
Poultry meals & entrees	82	163	77	146
Vegetable meals & entrees	24	61	6	39
Pasta products & combos	46	135	70	262
Prepared salads	12	28	13	51
Rice & rice combos	22	39	40	72
Total:	**473**	**1,104**	**479**	**1,189**

Source: Marketing Intelligence Service, Ltd.



Sous vide **entrees from GourmetFresh Foods feature 21-day shelf life at 35°F and are distributed from Florida to New York and Chicago.**

products to lower fat calories below 30 percent. Stouffer Foods (Nestlé) reformulated its 34-entree *Lean Cuisine* line to under 300 calories each, with 30 percent or fewer calories from fat and at least 95-percent fat-free. ConAgra added *Quick & Delicious* entrees such as Beef Stew and Creamy Chicken with Pasta to its *Healthy Choice* lineup, unveiled six *Healthy Choice Breakfast* English-muffin sandwiches, introduced eight budget-priced *Banquet Healthy Balance* dinners under 300 calories each, and reintroduced *Banquet Entree Express* as "the first frozen entrees for the smaller-sized family." Pillsbury (Grand Metropolitan) launched *Pappalo's* 92-percent fat-free pizza; Tombstone (KGF) introduced *Tombstone Light* 90-percent fat-free pizza. Both feature real cheese and lean meats.

Refrigerated: Most significant new entry: The *GourmetFresh* line of *sous vide* poultry, pork and seafood entrees from GourmetFresh Foods in Pompano Beach, FL. Entrees range from 130 to 230 calories each, feature 21-day shelf life at 35°F, a custom-designed *Lifelines* time/temperature indicator on each package, and are distributed as far north as New York and Chicago.

Crystal Farms introduced *Microwave Omlettes* to Minnesota markets. Carnation (Nestlé) rolled-out MAP-packaged *Contadina Fresh* pizza kits with crust, cheeses (Mozzarella, Provolone and Romano) and sauce separately packaged in the same carton, and toppings (such as Italian Sausage and Pepperoni) available separately. Pillsbury launched *Green Giant Freshtables*—fresh vegetable salads such as Oriental Stir Fry, Tortellini Primivera and Vegetables Rotini with Cheddar Sauce—in Minnesota.

Shelf-stable: Dial (*Lunchbucket*) and Hormel (*Health Selections*) added microwaveable low-fat/low-calorie entrees in retortable plastic cups; Carnation launched *Libby's Diner* pasta entrees in a similar cup; Dial and American Home Foods (*Chef Boyardee*) added adult-sized entrees in larger cups. Hormel extended its *Dinty Moore* line of microwaveable entrees in retortable plastic trays; Del Monte extended its *Vegetable Classics* line with *Pasta Classics* in similar containers. Hunt-Wesson (ConAgra) test-marketed *Hunt's Homestyle Meals* (such as Beef Ravioli) in 42-oz. *BiPak* cans, and S&W launched *Deli Classics Pasta Salad* in 16-oz. jars.

Circle 48 on Inquiry Card →

BAKERY

Bakery products introduced in 1991 totaled 498 (1,343 SKUs), down 14 percent from the 577 (1,382 SKUs) launched in 1990. Breakdown: Bread and bread products, 121; cookies, 167; crackers, 44; pastries and sweet goods, 86; cake and frosting mixes, 29; all other baking mixes, 51. More than half (258) trumpeted health claims; most of these bore multiple claims like those tabled. Most misleading: a few products containing chocolate or chocolate chips and labeled "no tropical oils." Significant introductions:

Bread: Surprisingly, the 40 calorie-per-slice "lite bread" craze of 1989-90 faded in '91. But the 1990 introduction of *Ironkids Bread* by Anheuser-Busch bakeries (Campbell Taggert, Rainbo, Colonial) sparked similar white breads with the fiber content of whole-wheat bread and aimed at youngsters. Examples: *Holsum Olympic Kids* (Metz), *Smart Kids* (Schwebel), *Kids' Choice* (Nickles). ConAgra extended its *Healthy Choice* brand into low-fat frozen muffins; Pillsbury (Grand Met) added lowfat *Hearty Grains Biscuits* to its refrigerated dough line; Sara Lee launched *Deli Style Bagels* in six varieties.

Cookies & crackers: Weight Watchers (Heinz) introduced several varieties of low-fat *Soft And Chewy* cookies. Pepperidge Farm (Campbell) unveiled several flavors of *Wholesome Choice* cookies with less than 30 percent of calories derived from fat. *Prime Time America* fiber cookies, formulated by that firm to complement a systematic weight-loss program, absorb water to create a sense of "fullness" and also derive less than 30 percent of calories from fat. Half the profits from fructose-sweetened *Fifty 50* cookies go to diabetes research, says manufacturer Fifty 50 Foods.

Some new cracker varieties were positioned as snacks. Nabisco introduced bite-sized, Z-shaped *Zings Cracker Chips* in three flavors, made from dried potatoes and "baked, not fried, (so) you can feel good about eating them," and extended a popular brand with *Ritz Whole Wheat Crackers*. Frito-Lay test-marketed *Doritos Cracker Crisps* cracker chips.

Pastries: Eli's Chicago's Finest launched three varieties of 87-percent fat-free *E'Lites Frozen Cheesecake*, the first bakery product to incorporate NutraSweet Company's *Simplesse* fat substitute. The first bakery products bearing the *Ore-Ida* (Heinz) brand—a line of thaw-and-serve muffins, Danish, brownies, rolls, croissants and specialty cakes—was introduced by the company's Bavarian Specialty Foods unit. Entenmann's (Kraft General Foods), first with fat-free pastries in 1990, extended its line. Pillsbury launched 11 ready-to-eat, microwaveable *Bake Off Refrigerated Baked Goods* including brownies, muffins, Cinnamon Rolls and Bundt cakes. Kellogg teamed-up with J.M. Smucker by adding *Pop Tarts* containing Smucker fruit fillings. Another "double trademark" which makes no health claims: *Sweetery Desserts Milky Way Cake*, a nine-inch three-layer refrigerated cake containing 4½ melted Milky Way candy bars plus butter, caramel-glaze filling and chocolate pecan cream-cheese frosting, from Sweetery of Anderson.

Baking mixes: Several processors launched microwaveable mixes. Examples: *Betty Crocker* Blueberry Mini-Muffin Kit with recipe, two mixes and 12-cup microwaveable pan, and *Betty Crocker MicroRave Singles* cake and brownie mixes, from General Mills; *Duncan's Cups* Blueberry Crumbcake microwave mix, with eight baking cups and measuring cup. Most appealing new mix to a *Food Engineering* editor: *Beer Bread Mixes* "prepared by mixing 12 ounces of beer with the mix and baking in a loaf pan for 50 minutes," from Lollipop Tree, Inc.

'Healthy' Tags On New Bakery Products, 1991

No fat	20
Low fat	48
No/low saturated fat	24
No/low cholesterol	116
No tropical oils	37
Low calorie	44
No/low salt/sodium	60
No preservatives/additives/ 'artificial' ingredients/MSG	102
High fiber	37
'Natural'	87

Source: Marketing Intelligence Service Ltd.

Circle 49 or see FEM, p. 262 →

NEW PRODUCT ANALYSIS

DAIRY

Three cheesemakers rolled-out natural cheese varieties incorporating *Simplesse* to reduce fat by 50-70 percent and calories by 45 percent. Shown above: *White Clover* Cheddar, Colby, Muenster and Monterey Jack from White Clover Dairy; *Cabot* Sharp Vermont White and Yellow Cheddars, from Cabot Cooperative Creamery. Not shown: *Falbo-Lites* Mozzarella from Avonmore Cheese Co. (Source: NutraSweet Co.)

Dairy-product introductions plunged 22 percent last year, from 445 (1,296 SKUs) in 1990 to 346 (966 SKUs) in 1991. Breakdown: Milk & beverage, 30; cheese, 82; ice cream and frozen desserts, 147; margarine, butter and blends, 23; yogurt, 28; dairy substitutes, 14; milk additives, 2; other non-beverage dairy-case products, 20. Of these, 75 percent (259) bore health claims such as "non-fat," "low fat" and "low cholesterol." Products that can make a difference:

Milk: Country Lake Foods (a subsidiary of Land O'Lakes) and Schnuck's Markets (St. Louis) unveiled two percent lowfat milk with cholesterol reduced 70 percent (compared to regular two percent milk) through steam-stripping technology. Crowley Foods, Marigold Foods (*Kemps Free*) and Promark (*Weight Watchers*) all launched "non-fat milk." Dean Foods launched *Dairy Ease* lactose-reduced milk in skim, one and two percent lowfat varieties, all UHT-pasteurized to extend refrigerated shelf life. Aseptic pioneer Real Fresh introduced lowfat, two percent and whole milk in quart-size aseptic cartons to Arizona markets, while Milk Maid rolled-out four flavored whole milks plus a lowfat in half-pint aseptic three-packs in New Jersey. Chefs Cream unveiled spoonable "triple-thick" Light Cream (24 percent fat) with one-year shelf life.

Cheese: Only 22 reduced-fat cheese products of all types – natural, pasteurized process, cottage and spreads – were introduced last year as compared to 64 in 1990, reflecting the difficulty of replacing the taste and texture of fat in cheese, and consumer dissatisfaction with offerings to date. But NutraSweet Company's *Simplesse* might make a difference: Kaukauna Cheese unveiled four varieties of *Lite 50* cold-pack cheese spread, the first cheese products to incorporate Simplesse as a fat replacer. Simplesse 100, based on whey-protein concentrate (WPC), replaces the plastic cream used in the regular product to reduce fat by 50 percent and calories by 25 percent while maintaining spreadability. Before year's end, three more cheesemakers rolled-out natural cheeses incorporating Simplesse 100 (see photo). Kraft General Foods (KGF) extended its own fat-replacement technology by introducing *Fat-Free Philadelphia Cream Cheese* and *Light n' Lively Free* Nonfat Cottage Cheese.

Ice cream & frozen desserts: The 1990 avalanche of fat-free frozen desserts continued as 19 more appeared in '91. Example: NutraSweet's *Simple Pleasures Light*, combining the company's Simplesse fat replacer with its *NutraSweet* sugar substitute plus polydextrose as a bulking agent for 80-90 calories per 4-oz. serving, or "two-thirds less than superpremium ice cream." In the novelty segment, Slim-Fast Foods introduced high-fiber *Ultra-Slim Fast Crunch Bars*, fortified with oat bran and yogurt-coated for only 110 calories per bar. According to *U.S. Industrial Outlook 1992* (Dept. of Commerce), demand for hard-pack frozen yogurt soared 91.5 percent and dollar shipments jumped 21 percent in 1991. This spurred 27 more new frozen yogurts last year atop the 51 introduced in 1990. Many of these new entries actually contain active cultures to conform to the FDA standard of identity for yogurt.

Spreads: Land O' Lakes introduced *Light Butter*, a blend of butter, water and skim milk with one-third less fat and cholesterol than regular butter. Fifty-two percent butterfat, it contains "none of the partially-hydrogenated vegetable fats used in margarines," and is recommended as a spread or toppping but not for baking or frying because of its water content. Borden introduced *Cannola Premium Margarine*, based on buttermilk and canola oil and claimed to be the lowest in saturated fat of any margarine,

while Fleischmann launched *Move Over Butter*, a cholesterol-free 72-percent vegetable-oil spread also incorporating buttermilk. Chef Gregory's Classic Foods introduced whipped butter in six "European-style" flavors; Land O' Lakes unveiled *Fresh Accents Butter* in two flavors. KGF offered cholesterol-free *Touch Of Butter Squeeze Spread* in a plastic squeeze bottle, plus cholesterol-free *Kraft Alternatives Spread*.

Yogurt: Most unique introductions: *Yogurt Plus* "European-style" yogurts in cucumber, mixed vegetable and plain varieties from Yogurt Plus Co.; *Yoplait Pudding*, "the first pudding with real yogurt" (including active cultures), in three flavors from Yoplait USA (General Mills).

MEAT/POULTRY

More than half (58 percent) of meat/poultry products introduced last year were tagged as "low fat." But if the FDA and USDA labeling proposals published last November take effect as regulations, many won't *be* "low fat" after May, 1993. (Under FDA's proposed "low fat" descriptor, also adopted by USDA, only products containing three percent fat or less by weight will qualify as "low fat," and the "percent fat-free" claim may be used only on "low fat" products; i.e., those 97-percent or more fat-free.)

New meat and poultry products launched in 1991 totaled 115 (316 SKUs), down one percent from the 128 meat/poultry products unveiled in 1990. Sixty-two of these (175 SKUs) are red-meat products, down from 76 in '91; 53 (141 SKUs) are poultry products, nearly even with the 52 introduced in '90. Most are refrigerated; a few are frozen.

According to Marketing Intelligence, however, few were truly "new." Less than ten percent of last year's meat/poultry introductions meet MI's criteria for innovation. Among them: *American Bison Salami* from Denver Buffalo Co.; *Ball Park Pretzel Dogs* (hot dogs in soft pretzels) from Kahn's & Co. (Sara Lee); *Lean & Luscious Ground Beef, Water & Carageenan Product* (50 percent less fat) by Tops Markets in Buffalo, NY; *Reindeer Meat Sausage* from Alaska Sausage Co.

Twenty-one new meat/poultry products are labeled "fresh," although some won't meet the proposed FDA/USDA descriptor defining "fresh" as raw food which has not been frozen, processed or preserved. No less than 22 new meat/poultry products push the health-claims envelope with labeling as "natural," whatever that means—a descriptor FDA and USDA have yet to tackle.

Weight Watchers International (Heinz) packaged turkey and ham products under its *Premium Lean Cut* label, plus several turkey, ham and bologna products in its *Deli Meats* line, all positioned between 90 and 99-percent fat-free. Bryan Foods (Sara Lee) launched the *Bryan Light* luncheon meats "formulated for Southern tastes," smoked pork chops, boneless ham and low-sodium wieners, all tagged 96 or 97-percent fat-free. Products packaged for extended shelf life include *Jennie-O Lean Cuts*, fresh turkey products in modified-atmosphere (MAP) packaging from Jennie-O Foods, and Oscar Mayer's *Deli-Thin* 96 percent fat-free Honey Ham and Roast Beef in resealable *Zip-Pak* barrier-plastic pouches. In the frozen segment, ConAgra extended its *Healthy Choice* brand with chub packs of ground beef tagged 96-percent fat-free.

Three ConAgra subsidiaries introduced turkey bacon while Wampler-Longacre unveiled turkey chops and Shenandoah launched turkey burgers. Outlook for 1992: More low-fat ground-beef and pork-sausage products, incorporating new fat replacers unveiled late 1991.

'Healthy' Tags On New Meat/Poultry Products, 1991

Low fat	67
Low calorie	18
Low cholesterol	8
No cholesterol	2
Fresh	21
Natural	22
Pure	4
Low salt/sodium	13
No additives/ preservatives/MSG	12

Source: Marketing Intelligence Service, Ltd.

1992 EQUIPMENT BUYERS SURVEY:

Weathering the Recession

As automation continues to significantly impact the food processing industry, recessionary cautions are temporarily slowing modernization efforts in 1992.

ROBERT E. HARVEY
MANAGING EDITOR

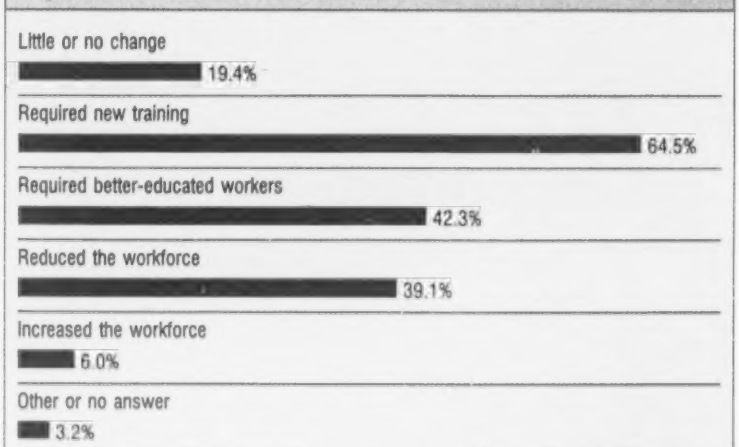
Concerned more with stoking the home fires to ward off recessionary chills then venturing out onto an icy limb, food companies are making new equipment purchases a lower priority this year than last.

The irony, however, is that although interest in new equipment may be down, budgets for equipment are up, according to a survey of *Food Engineering's* 400-member Executive Advisory Panel. Also holding strong are production rates, noted the panel.

Despite the realities of high budgets and strong production, however, food companies seem determined to circle the wagons, assume a recessionary posture, take fewer risks, and adopt a wait-and-see attitude.

Evidence of this cautionary approach can be seen by comparing the company-wide purchasing priorities of 1991 with those of 1992. Across the board, the high priority purchases of

Impact of Automation on Workforce

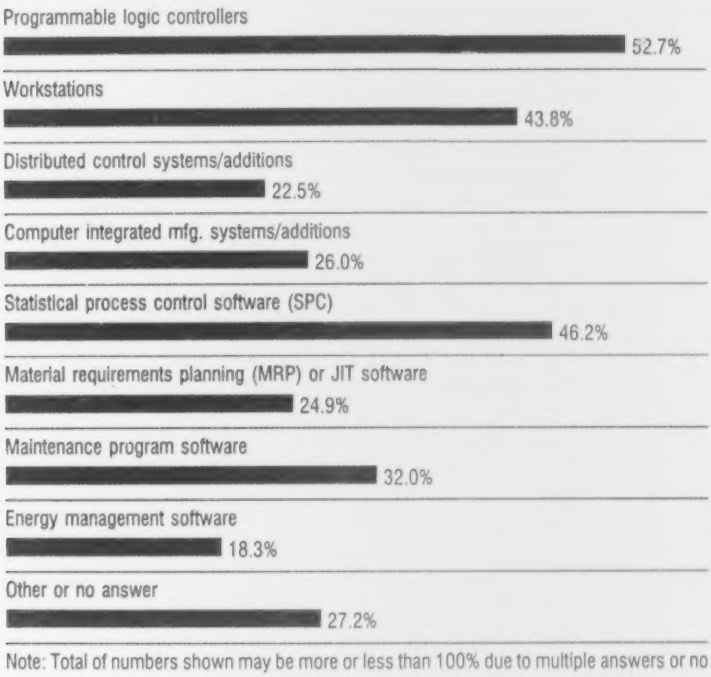


Note: Total of numbers shown may be more or less than 100% due to multiple answers or no response.

Source: Food Engineering's Process Equipment Buyers Survey 1992.

EQUIPMENT BUYERS SURVEY

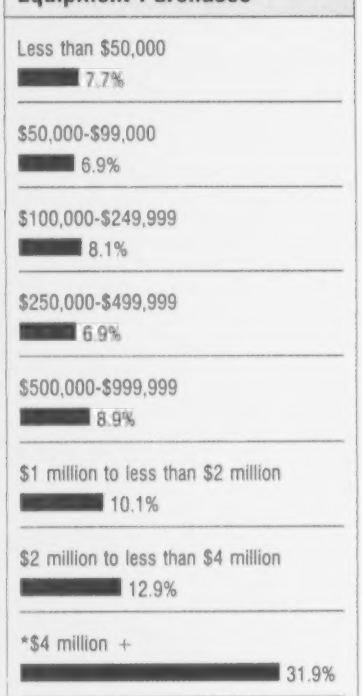
Location Process Control Purchases (planned)



Note: Total of numbers shown may be more or less than 100% due to multiple answers or no response.

Source: Food Engineering's Process Equipment Buyers Survey 1992.

Company-Wide Budgets for Equipment Purchases



*For companies with 500 or more employees, the percentage is 54.8.

Note: Total of numbers shown may be more or less than 100% due to multiple answers or no response.

Source: Food Engineering's Process Equipment Buyers Survey 1992.

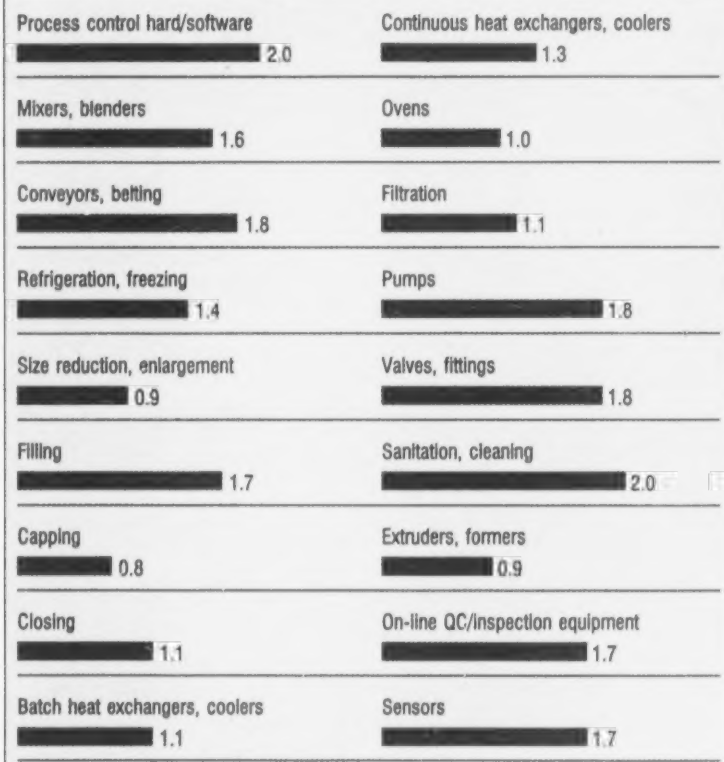
1991 became less desirable in 1992. Of 18 different equipment categories surveyed, none commanded as much demand this year as last. The equipment that fell the furthest on *FE's* priority scale (1 = low priority, 2 = some priority, 3 = high priority), includes capping equipment (falling off from a 1.93 priority rating in 1991 to 0.8 this year), extruders and formers (falling from 1.78 to 0.9), and size reduction and enlargement equipment (from 1.59 to 0.9).

Commodity items such as pumps, valves and belts, sanitation equipment, and high-tech devices such as sensors, inspection equipment and process controls, slipped least in their priority status, compared to 1991.

If equipment buying is less of a priority, budgets for equipment purchases remain high. Despite the recession, of all the companies surveyed, 55.0 percent reported equipment budgets of over $1 million (compared to 53.0 percent in 1991 and only 47.6 percent in 1990).

In other good news for equipment suppliers, food production continues to accelerate. Survey respondents report that production increases in 1992 (at their location) will dip only slightly below 1991 levels. For example, in 1991, 77 percent of those polled forecast that production would increase over year-earlier totals. For 1992, that percent had slipped—but only slight-

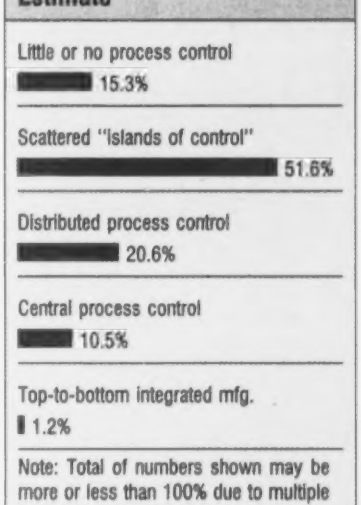
Company-Wide Purchasing Priorities



Low Priority = 1; Some Priority = 2; High Priority = 3

Source: Food Engineering's Process Equipment Buyers Survey 1992.

Company-Wide Automation Estimate


Little or no process control 15.3%
Scattered "islands of control" 51.6%
Distributed process control 20.6%
Central process control 10.5%
Top-to-bottom integrated mfg. 1.2%

Note: Total of numbers shown may be more or less than 100% due to multiple answers or no response.

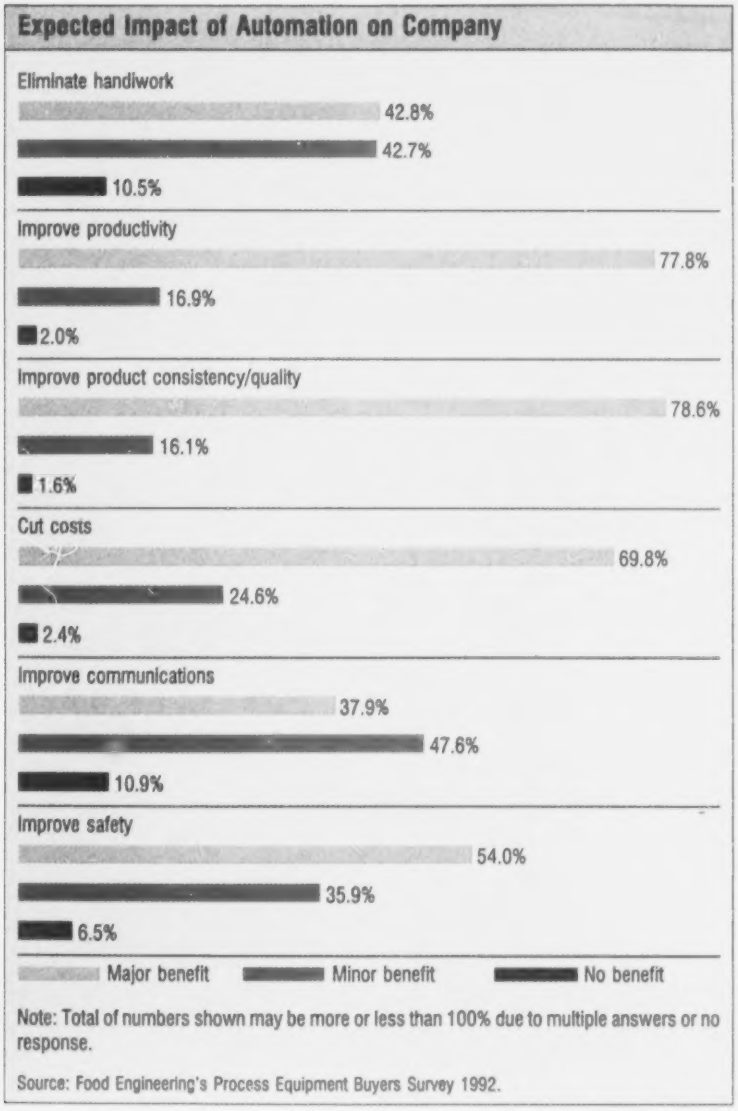
Source: Food Engineering's Process Equipment Buyers Survey 1992.

ly—to 71 percent. And when queried about expected *company-wide* production increases, some 79 percent predicted increases this year vs. 1991's 82 percent.

If the recession is not slowing production or shrinking budgets, it appears to have slowed down modernization efforts. Companies continue to make due with islands of automation, with little effort to move toward increased distributed or centralized control, according to the survey.

Similar to last year, some 72 percent of those surveyed said automation in their firms was spotty (scattered "islands"), 12 percent admitted to little automation, while 15 percent proclaimed operations completely, or almost completely, automated.

If new automation efforts have slowed to a crawl in recent months, increased automation over the past several years continues to significantly impact operations, say all but 19 percent of the survey's respondents. While those 19 percent noted no impact on the workforce at their location due to new automation introductions, some 65 percent said automation has resulted in increased training, 39 percent cited employee reductions, and 42 percent (a significant increase over last year's 36 percent) reported increased demands for better-educated production workers.



The education is needed because more responsibility is being given to machine operators for on-line quality measurement, said the panel. When asked if operators at their location have been given more responsibility, 63 percent responded affirmatively.

Along with a shift in responsibilities has come a reorganization of plant personnel. Asked what organizational changes have taken place over the past three years: 30 percent said supervisors are responsible for more personnel, 60 percent said the workforce is more team oriented, 22 percent indicated an increase in the ratio of hourly to salaried workers, 18 percent noted new configurations of shift hours, and 60 percent reported increased operator training.

Along with the workforce, specific disciplines within the factory, such as quality assurance/quality control (QA/QC), are evolving as well. When asked how the QC/QA function has changed over three years, 42 percent said it had expanded, although 17 percent said it had been scaled down. Some 23 percent said it was now more automated, while 39 percent said that their QA/QC operations had been reorganized. On the other hand, 24 percent noted little change.

While currently not a top priority, the panelists see an increasing need to invest in automation over the long haul. The types of automation the responding panelists would like to see developed run the gamut from: new machines to reduce sand in shellfish; equipment to grade fresh cucumbers by diameter size and then by shape; systems which would distinguish parts of a frozen cut up chicken and then sort, count, and package them.

They also desire on-line accurate and reliable automatic moisture analysis (several respondents); pit detectors that really work; devices that remove specks from applesauce; and better particle-detection devices of all sorts.

Along with specific requests, panelists wanted automation that addressed more general concerns as well. The these concerns focused primarily on the need for: more flexibility, more product uniformity, more safety, more computer automation and networking capability, more robotic packing lines, and—not surprisingly—more American-made food processing equipment. The panelists also wanted to see less handwork (along with more vision systems to reduce that handwork). ▲

PACKAGE RECYCLING:

Recycling is underway in the U.S. market but the ramifications and the costs are still being sorted out.

MARGIE J. RUSSELL
TECHNICAL EDITOR

There is a war going on in the alleys and curbsides of American cities. Environmentalists think it is great but the packaging industry now wonders if it's worth the price. The war is the removal and the recycling of the thousands of pounds of food packaging discarded every day by American consumers. These same consumers are told by their municipal leaders to sort this discarded material and place it in various containers for pick-up.

Now the war begins.

Who takes these materials? Where do they go? What happens to them? And, most importantly, how much does all this cost?

Jerry Taylor, director of natural resources studies at the Cato Institute in Washington, DC, meets these questions head-on and tries to sort out the myths and realities of the country's solid waste issue. He points to a *Forbes* piece from last October which stated that recycling seems to be the preferred method for dealing with this issue but it can be pushed too far, and no one wants to be the one to shoot "Snow White." "However," says Taylor, "I would like to suggest that killing Snow White would be an act of self defense in this case. Either we kill her or she kills us." Taylor admits this sounds harsh but "an examination of municipal solid waste recycling finds that the ideal scarcely represents the reality."

So what's going on?

It is now estimated that 10 percent of all municipal solid waste in the U.S. is recycled. This figure should rise to 25 percent by the end of the year if all goes according to the goals designed by the Environmental Protection Agency.

The modern-day recycling process

Consumers have jumped on the recycling bandwagon as the number of recycled rigid containers continues to rise.

PROBLEM

is not complex. Each material is separated from the waste stream, processed into a usable form, and sold to an end market user. According to The Council for Solid Waste Solutions, three essential components are required for the success of any recycling program:

1) a continuous source of recyclable material;
2) a significant volume of recyclable material;
3) end-use markets for recycled products which provide adequate market values for the material being recycled.

Everything in between these steps is, unfortunately, complicated. The recycling process and programs that support it can be compared to a Catch-22 scenario: markets will not be established if a steady supply of material is not readily available and recyclers will not push their processes unless end markets are in place. It is very expensive to run recycling programs. But, recycling programs inherently provide several benefits to the industry: they prevent new waste from entering landfills, they provide a ready source of raw materials, and they carry an enormous amount of economic influence on the various markets in the packaging industry.

For example, aluminum, without question, has the most successful recycling rate of any packaging material in history. It is very energy intensive to produce aluminum from raw ore but energy is significantly reduced when the manufacturing is done with recycled material. With a recycling rate in the range of 50 to 60 percent and a recycled aluminum content approaching 50 percent in each can, it is no wonder the aluminum industry is the champion of the recycling world.

And in order to get more scrap aluminum returned, Reynolds Metals Company, Richmond, VA, now emphasizes the establishment of buyback centers in those communities with curbside collection programs. The company believes that curbside collection has a lot of merit but is only one part of a comprehensive solid waste management strategy. A total solution, says Reynolds, must include buyback centers where people get paid directly for their recyclable material.

Material	Lbs./day collected	Market value (dollars/lb.)	Total value (in dollars)
Aluminum	60	.35-.40	21.00-24.00
Clear glass	840	.01-.02	8.40-16.80
Green glass	360	0.1-0.2	3.60-7.20
Brown glass	180	.01-.02	1.80-3.60
HDPE/PET	300	.06-.08	18.00-24.00
Newspapers	3,960	(-.01)-0.0	(-39.60)-0.0
Steel cans	300	.03-.04	9.00-12.00
Total	**6,000**	—	**$22.20-$87.60**

Source: R.A. Perkins, The Council for Solid Waste Solutions.

A study conducted by The Council for Solid Waste Solutions analyzed a typical collection and sortation program of recyclable materials in the Midwest. This chart highlights the amount of each material collected and the range of market values for each material involved in this program.

The glass market uses recycled material in new glass manufacture providing substantial energy savings, but the savings is not as high as that seen in the aluminum market. Recycled glass, or cullet, is used as a raw material in glass manufacturing and is crushed and mixed with sand, limestone, and soda ash and formed into

OR SOLUTION?

new containers.

Owens-Brockway, Toledo, OH, has paid for recyclable material collected by municipalities and individuals: over $300 million in the past 10 years. The company claims it has accounted for more than half of the two million tons of glass containers recycled in the U.S. in 1990 and by recycling more than one million tons of glass, 4.5 billion containers were kept out of landfills.

And do not forget about the elderly grandfather of packaging, the steel food can, which reached a recycling rate of 25.6 percent in 1990. With 1991 rates out soon, the Steel Can Recycling Institute (SCRI) expects to see another healthy gain in the recycling rate for all steel cans. (For further details on the steel industry, see the sidebar story from the SCRI.)

A new family of biodegradable materials from Novon Products Group is targeted for the packaging industry for such applications as dairy containers, food service, and loose-fill protective packaging as shown here. (Source: Warner-Lambert Company.)

The plastics industry, however, has problems inherently all of its own—consumers perceive that plastics cannot be recycled, they take up too much room in a landfill, and they are bad for the environment.

"Developing an expanded recycling infrastructure for plastics is very much like the chicken and egg enigma," said Jery Huntley, director of recycling, The Council for Solid Waste Solutions, Washington, DC during a talk at the conference, Recycling: Is It Really the Answer?, sponsored by The Packaging Group, Inc. (Milltown, NJ). "Which part of the infrastructure comes first: collection, handling, reclamation, end-use markets? We decided that it has to be markets first because of the economic interdependence at each stage of the process. If collection is taking place and a handler prepares post-consumer plastics for recovery with no markets in sight, then the entire process stalls."

Huntley pointed out that the Council has worked to infuse vitality into post-consumer plastic markets since the amount of collected material will continue to increase. A study completed for the Council revealed that approximately 225 million pounds of polyethylene terephthalate (PET) were recycled in 1990, an increase of 38 percent over 1989 and 160 million pounds of high density polyethylene were recycled in 1990, representing a growth rate of 111 percent over 1989. And with the approvals for the decomposition processes like hydrolysis, methanolysis, and glycolysis coming on stream, this rate should increase since a steady supply of material will be required. Eastman Chemical Company (Kingsport, TN), Hoechst Celanese (Greer, SC), and Goodyear Tire and Rubber Company (Akron, OH) are the three resin suppliers currently involved in the commitment to this form of plastics recycling.

However, the current supply of recycled plastic exceeds demand and the number of recycling programs now collecting plastic has increased exponentially in the last year. A soft economy has caused the price of virgin plastic to fall, in some cases below the price of recycled plastic, further reducing demand for post-consumer material. "But," said Huntley, "as the economy rebounds, virgin plastic will become more expensive than recycled, and post-consumer plastic will look more attractive to manufacturers of plastic products."

Even though these numbers for each segment appear impressive, Cato's Jerry Taylor points out that if recycling is viewed as a "silver bullet" capable of managing most of the country's solid waste, then the industry and the public are sadly mistaken. "An objective examination of the waste stream indicates that the high recycling rates often mandated by legislation are simply unreachable,"says Taylor, "and when participation rates and collection economies are factored in, only about 18 percent of the waste stream can conceivably be collected for recycling. The industry must get this information out and stress that 'there is no fire.'"

Unfortunately, solid waste will not just disappear. Trying to make it "disappear" has already been tried with

SPECIAL EMPHASIS: **RECYCLING**

Just like the "battery," the steel can keeps on going

Steel cans have been bringing food to our tables in America and across the world for over a century, often under the name of "tin" cans. In the last 100 years, steady improvements to the "original" steel can have resulted in a strong and durable package containing more than 1,500 different foods.

Along with steady packaging improvements, the recycling of food cans continues to improve, and in fact, gain momentum. From 1988 to 1990, the recycling of all steel cans increased by 64 percent. In 1990, one in four food cans was recycled. There are many reasons for the continuing increase in these recycling rates. The first reason is that the SCRI, with the support of the steel industry and its member companies, has long believed in a grass roots approach to recycling. The phrase, "think globally, act locally," holds especially true for recycling. Very often, community X recycles five materials while community Y, right next door, recycles only two. Direct contact and market assistance will ensure that recycling is both a "global" and a "local" concern. The SCRI's seven regional recycling offices help to provide this grass roots support necessary to the development of recycling programs.

Second, broad recycling options assist recycling programs. Steel cans are recycled through curbside collection, drop-off and multi-material recycling programs, and through magnetic separation at resource recovery facilities with steel recovery rates often exceeding 90 percent.

Let's not forget markets. Steel cans have the benefit of a strong end market. The steel industry, with an overall recycling rate of 66 percent, is a welcome home for post-consumer steel cans, where they will become new cans, cars, appliances, toys and construction materials, to name a few. Additionally, the detinning industry, which has long worked hand-in-hand with the steel industry, also collects steel cans for recycling.

Another reason for steel's success is cooperation – from the consumer to the food service manager, from the recycling coordinator to the steel buyer, no one does it alone. In recognition of this fact, communities large and small put great effort into educating their citizens, school children and business leaders on the benefits of recycling.

Another very important cooperative link in the recycling chain is the so-called "front-end:" the can manufacturers, fillers, packers and grocery retailers. Their role often comes before the cans are recycled, but their support of recycling and efforts toward education and awareness are critical. The SCRI has seen its member companies support recycling to a great extent. These companies and organizations recognize that a recycled steel can is a resource for tomorrow.

As the SCRI works toward its goal of at least a 66 percent recycling rate by 1995, its efforts extend in many directions. The regional recycling offices continue to work to build the steel can recycling infrastructure. Extensive state legislature monitoring is helping to ensure that steel cans, steel products and other recyclable materials receive just consideration in the legislative arena. Marketing programs targeted toward enhancing recycling awareness and participation are pushing outward across the country. Educational programs from pre-school through college are being developed to ensure that tomorrow's citizens enjoy the benefit of responsible solid waste management today. And, the SCRI is well on its way toward developing a comprehensive data base that will help consumers locate the nearest steel can collection program for recycling.

the biodegradable theory; the market and interest in these films were driven by the understanding that the materials would eventually disappear in landfills or evaporate into the air. Since most landfills resemble sealed-up tombs, there is little way naturally occurring materials like air and water can work on and break down degradable films.

Yet, new research and developments in the biodegradable plastic area continue although with not as much fanfare as in past years. One particularly interesting product with implications for several industries is the *NOVON* specialty polymers line from the Novon Products Group, a division of Warner-Lambert Company. This line of materials combines the performance of plastics with the decomposition benefits of paper.

Products made from NOVON specialty polymers biodegrade completely in biologically-active environments such as those found in aerobic composting. The materials are made primarily from starch. The product is not classified as a degradable plastic or a masterbatch, according to Rhonda Brooks, vice president, marketing and sales for Novon Products. "The polymers are an excellent choice for packaging applications such as dairy containers and lids, margarine tubs, candy wrappers, and portion wrapping," said Brooks. The company is also targeting the food service packaging industry where the waste problem is extremely visible. Potential applications here include cutlery, thermoformed containers, drink lids and straws. ▲